Supersedes Suppl. Spec. dated 3/20/98, 10/2/1998, 3/5/1999, & 8/6/1999

SUPPLEMENTAL SPECIFICATION

AMENDMENT TO SECTION 603 - CULVERTS AND STORM DRAINS

Add to 2.6:

2.6.3 Corrugated polyethylene pipe end sections shall meet the materials requirements of AASHTO M 294.

Add to Materials:

2.9 Plastic Pipe

2.9.1 Corrugated Polyethylene pipe shall conform to the requirements of AASHTO M 294, Type S, or Type C as specified on the plans.

2.9.2 Polyvinyl chloride (PVC) profile wall pipe shall conform to the requirements of AASHTO M 304. PVC pipe shall not be used in applications where it will be exposed to long term ultraviolet light without approved protection for the exposed area.

2.9.3 Basis of acceptance and test requirements of plastic pipe shall conform to AASHTO M 294 or AASHTO M 304 for the respective type of pipe. Only approved manufacturers will be allowed to furnish plastic pipe, as shown on the Qualified Products List. A certificate of compliance, as required by 106.04, shall be provided for each shipment.

2.9.3.1. Polyethylene pipe manufacturers will have all pipe sizes tested in accordance with M 294 by the AASHTO National Transportation Product Evaluation Program (NTPEP) on an annual basis for each manufacturing plant furnishing pipe. The Department or its representative will select and label the sample to be tested. Each sample will be a split sample, with the manufacturer performing comparative testing, the results of which will be furnished to the Department. The cost of sampling, shipping, and NTPEP testing will be borne by the manufacturer.

2.9.4 Only soil tight pipe fittings supplied or recommended by the manufacturer shall be used.

2.10 Unsuitable material for bedding and backfilling pipes shall be a material that is organic, or cannot be placed to meet the required compaction or bearing capacity, with the effort normally required for this work. This definition shall only apply in cases where material properties, compaction or bearing requirements are not otherwise specified in the contract documents.

2.11 Concrete class F, flowable fill may be requested in writing as a substitute for backfill material. Approval in the form of a supplementary agreement shall be in consideration of, but not limited to, differential frost heaving due to dissimilar materials, unit weight, structural requirements, lack of permeability, and damming resulting from water flow cut off.

2.12 Drainage Pipe (Contractors Option).

2.12.1 It shall be the Contractor's option to furnish reinforced concrete pipe 100 kPa (2000 D) or plastic pipe for drainage pipe (contractors option). Reinforced concrete pipe shall meet the requirements of 2.1. Plastic pipe shall meet the requirements of 2.9.

Amend 3.1.2 to read:

3.1.2 Do not lay or embed pipe in standing or running water. The Contractor shall provide for the temporary diversion of water in order to permit the installation of the culvert in a reasonably dry trench unless otherwise permitted. At all times prevent runoff and surface water from entering the trench.

Add to 3.1.2:

3.1.2.1 When groundwater is present in the work area, dewater to maintain stability on in-place and imported materials and maintain water level below pipe bedding and foundation. Maintain control of water in trench before, during and after pipe installation, and until embedment is installed and sufficient backfill has been placed to prevent flotation of the pipe.

Add to 3.1.7:

3.1.7.1 For plastic pipe the minimum trench width shall be the greater of either the pipe outside diameter plus 400 mm (16 in) or the pipe outside diameter times 1.25, plus 300 mm (12 in).

Add to 3.2.1.

3.2.1.1 For plastic pipe the maximum particle size of material shall be 37.5 mm (1-1/2 in).

Amend the second sentence of 3.5.1 to read:

Backfill material shall be free from hard lumps, clods, or rocks larger than 75 mm (3 in) diameter and free of stumps and organic material.

Add the following after the amended second sentence of 3.5.1:

For plastic pipe hard lumps, clods, or rocks shall not be larger than 37.5 mm (1-1/2 in) diameter.

Amend the last sentence of 3.5.2 to read:

All backfill material shall be compacted to not less than 95 percent of AASHTO T 99, Method A.

Add to 3.5.3:

3.5.3.1 For plastic pipe the minimum cover with manufactured or processed aggregates shall be 0.6 m (2 ft) and with all other material 1 m (3 ft).

Amend 3.7 to read:

3.7 Workmanship. Any pipe which is not true to alignment and grade or which shows any undue settlement or deflection after laying or is damaged shall be removed and relaid or replaced without extra compensation.

Add to 3.7:

3.7.1 Deflection for plastic pipe shall not exceed 5 percent in the first 90 days. When deflection verification is considered necessary by the Engineer, all necessary manpower and equipment, including mandrels for such tests, will be provided by the Contractor and shall not be performed until 30 days after installation. When mandrel testing is required the mandrel diameter shall be:

> The Specified Pipe Diameter minus Inside Diameter Tolerance (1.5% x Specified Diameter Pipe; Maximum Allowable is 12 mm (0.5")) minus allowable deflection (5% x Specified Pipe Diameter).

Add to Basis of Payment:

5.6 When deflection verification testing is ordered by the Engineer, all costs associated with this testing will be paid by the Contractor, unless the deflection is 5 percent or less for a complete run of pipe. When deflection is 5 percent or less, the Contractor will be reimbursed for all costs associated with the testing, as extra work, for all continuous runs of pipe found to be acceptable.

5.7 Concrete class F, flowable fill substituted for backfill material shall be subsidiary to the pipe item.

Add to Pay items and units (Metric):

603.8310_	_ _ _ mm Plastic Pipe (Corrugated Interior)	Linear Meter
603.8320_	_ _ _ mm Plastic Pipe (Smooth Interior)	Linear Meter
603.8520_	_ _ _ mm Corrugated Polyethylene End Section	Each
603.6900_	_ _ _ mm Drainage Pipe (Contractors Option)	Linear Meter

Add to Pay items and units (English):

603.831_ _	_ _" Plastic Pipe (Corrugated Interior)	Linear Foot
603.832_ _	_ _" Plastic Pipe (Smooth Interior)	Linear Foot
603.852_ _	_ _" Corrugated Polyethylene End Section	Each
603.690 _ _	_ _" Drainage Pipe (Contractors Option)	Linear Foot